

CLAIMS

1. Method of providing a dedicated channel (DCH) for transport on a downlink dedicated physical channel (DPCH) comprising a downlink dedicated physical data channel (DPDCH) and a downlink dedicated physical control channel (DPCCH),

5 comprising the steps of:

receiving digital user data bits (12) for transport on the DPDCH,

receiving first digital control bits (14) related to the DPDCH for transport on the DPCCH,

10 receiving second digital control bits (18) related to a high speed downlink packet access (HSDPA) common channel (HS-DSCH), and

multiplexing the digital user data bits, the first digital control bits and the second digital control bits for transport on the downlink DPCH.

2. The method of claim 1, wherein the step of multiplexing comprises the step of

15 multiplexing the second digital control bits into one or more slots of a frame of the downlink DPCH.

3. The method of claim 2, wherein the step of multiplexing comprises the step of

20 multiplexing the second digital control bits into the one or more slots of a frame of the

downlink DPCH along with selected first digital control bits.

4. The method of claim 2, wherein the one or more slots of a frame of the downlink

DPCH used for the second digital control bits are fixed in a same position within

repetitive frames.

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5. The method of claim 2, wherein the one or more slots of a frame of the downlink

DPCH used for the second digital control bits are variable in number within repetitive

frames.

6. The method of claim 5, wherein the one or more slots of a frame of the downlink DPCH used for the second digital control bits are variable in position within the repetitive frames.

5 7. Apparatus of providing a dedicated channel (DCH) for transport on a downlink dedicated physical channel (DPCH) comprising a downlink dedicated physical data channel (DPDCH) and a downlink dedicated physical control channel (DPCCH), comprising the steps of:

means (13) for providing digital user data bits (12) for transport on the DPDCH,

10 means (15) for providing first digital control bits (14) related to the DPDCH for transport on the DPCCH,

means (19) for providing second digital control bits (18) related to a high speed downlink packet access (HSDPA) common channel (HS-DSCH), and

15 means (20) for multiplexing the digital user data bits (12), the first digital control bits (14) and the second digital control bits (18) for transport as a modified downlink DPCH.

20 8. The apparatus of claim 7, wherein the step of multiplexing comprises the step of multiplexing the second digital control bits (18) into one or more slots of a frame of the downlink DPCH.

9. The apparatus of claim 7, wherein the means for multiplexing multiplexes the second digital control bits (18) into a slot of a frame of the downlink DPCH along with selected first digital control bits (14).

25 10. The apparatus of claim 7, wherein the means for multiplexing multiplexes the digital user data bits (12) into a slot of a frame of the downlink DPCH along with the second digital control bits (18).

11. The apparatus of claim 8, wherein the one or more slots of a frame of the downlink DPCH used for the second digital control bits are variable in number within repetitive frames.

5 12. The apparatus of claim 11, wherein the one or more slots of a frame of the downlink DPCH used for the second digital control bits are variable in position within the repetitive frames.

10 13. The apparatus of claim 8, wherein the one or more slots of a frame of the downlink DPCH used for the second digital control bits are variable in position within repetitive frames.

15 14. The apparatus of claim 8, wherein the one or more slots of a frame of the downlink DPCH used for the second digital control bits are fixed in a same position within repetitive frames.